

Sociocultural Drivers of Spirituality in Indian Saints: A Principal Component Analysis

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Human health is multidomain. However, the physical component has dominated health research. Spiritual health, the component traditionally considered the pivot for health and wellness, has taken a back seat. Exploring its' different determinants in the traditional preachers will enhance our understanding of them and will be a guide for their use in the common man's life.

Aim: To find out important sociocultural factors/drivers of the spiritual health of Indian Saints.

Objectives: To identify the important social and cultural determinants of spirituality in the study group by factor extraction through Principal Component Analysis (PCA).

Methodology: 958 connecting Indian Saints who congregated at Kumbh Mela in the holy city of Ujjain in 2016 were randomly selected in equal proportion from different sects (clans). Their sociocultural background and spiritual score were evaluated by a sociocultural questionnaire and Spiritual Assessment Inventory (SAI). The contribution of sociocultural factors to spiritual score was analyzed by Principal Component Analysis (PCA) and linear regression modelling. Statistical significance was established at $p < 0.05$.

Results: 20 sociocultural factors were evaluated for component loading (factor extraction) and their impact on the spiritual score. The Kaiser-Meyer-Olkin Measure (KMO) score of Sampling Adequacy, Bartlett's test of sphericity and Communalities extraction were 0.57, sig. of 0.00 and ≥ 0.4 , respectively, thereby supporting, factor analysis. On PCA 6 had an eigenvalue > 1 . All of these 6 principal components were found maintainable on The Monte Carlo PCA for Parallel Analysis and they together explained 66.20% of the cumulative variance. Their respective taxonomies were emancipation (PC 1), family heritage (PC 2), stimuli (PC 3), faith (PC 4), education (PC 5), and self-hegemony (PC 6). On regression analysis, the four important influencers of spirituality were participants' origin from a joint family ($p=0.00$), their daily routine for spiritual enhancement ($p=0.01$), respect for other religions ($p=0.00$), and self-motivation ($p=0.01$).

Conclusion: Emancipation (freedom from family bondage), the presence of religious family background, a fixed daily routine, belief in all religions, an unremitting drive for spiritual education, and self-hegemony were dominant components that determined spirituality in Indian Saints. Translating these drivers for the benefit of commoners may enrich their overall health and wellness.

Introduction

Out of the different components, the physical dimension of health is enjoying maximum empirical attention and support (80%) thereby creating a huge inequity in health and wellness research.¹ Unfortunately, this dividend has not been paid. Human suffering and unwellness remain compromised. This has opened up the discussion on health research equitability. The demand for attention to other components of human health like social, emotional, and spiritual are getting realized.

Spirituality has ruled the world in the past and its imprint has not completely weakened. Christian clergies, Buddhist monks, Muslim mullahs, Indian saints are a clan of their own. Though they are divided

by religiosity, spiritual fulfillment is their key driving force. This revered community plays a very important role in guiding and even governing society. There are many past and present instances, where the clan supreme is the head of the states and governs countries with the support of his clergies. In the past, the theocratic governments were the predominant ones. Some important examples were Ancient Egypt, Japan, Tibet, Israel, and China where the emperors were believed to be the descendants of God or Goddess.² At present-day, we have 7 theocratic Governments of which 6 are Muslims and one Christian.³ Though over time, theocratic governance is losing its shine, the role of religion in developing

Access this article online

Website:

www.cijmr.com

Keywords:

Indian Saints, PCA, Sociocultural factors, Spirituality.

10.58999/cijmr.2022.113

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Submitted: 12/04/2022

Revision: 29/05/2022

Accepted: 07/06/2022

Published: 30/06/2022

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How to cite this article: Mishra B. Sociocultural Drivers of Spirituality in Indian Saints: A Principal Component Analysis. Central India Journal of Medical Research. 2022;1(1):13-19.

spiritual well-being and above all, wellness is on the uprise.

Most world agencies have started recognizing spirituality as the 4th component of human health.^{4,5} This evolving scenario makes it mandatory to explore its different determinants, especially among the spiritual preachers.

In Hinduism, there are no demographic and sociocultural bars in selecting a spiritual path/clan. Anyone at any stage of life can join the clan.^{6,7} It has been observed that the spiritual score, an important indicator of spirituality, depends on many factors, of which sociocultural one is a key player.⁸ Though there are scientific studies on them in other religions, the dearth is evident in the Hindu cult/clan. This is due to the unavailability of a sizable study population at a fixed locality on routine occasions. The scope to study them is ripe when once in every 12 years, the Saints, along with their followers and commoner congregate for over 2–3 months at one among the four fixed geo-celestially significant locations that conduct the world-famous Kumbha Mela - a religious riverside mass gathering on predefined dates on a rotatory platform.^{9,10} In 2016, at the holy city of Ujjain, such an event provided the right opportunity to explore this knowledge gap.

Methodology

Participants from 13 Akharas (groups/sub-clans) of Hinduism were sampled by random, and systematic random sampling method. 5 out of the total 13 Akharas were selected by allocation of random numbers. From each akhara, 250 participants were selected using the systematic random technique with a group interval of 10. Thus, a sample size of 1250 consenting participants was calculated. The break-up includes 1125 (10%) participants based on previous event record.¹¹ To this, 10% (125 approx.) was added to take care of interim clan growth. But we collected information from 1124 participants during the study period (May to July). Among them, 1039 provided complete information for the primary outcome variable, i.e., spiritual score. This sample of 1039 was subjected to outlier analysis by box plot that detected 77 outliers. Thus 962 participants' information was subjected to statistical analysis for SAI-based spiritual scores. Out of them, 958 participants provided complete information about their sociocultural variables. Whose information was analyzed to determine the role of sociocultural factors on spirituality.

Data Analysis

The results were derived by SPSS version 25 software and Monte Carlo PCA for Parallel Analysis. Principal

Component Analysis for factor reduction/extraction and regression analysis of extracted components was carried out by SPSS 25 and component validity by Monte Carlo PCA for Parallel Analysis. The p-value of < 0.05 was considered for statistical significance.

Results

The age range of the participants was 16–100 years, with a mean of 54.57 (SD ± 14.5) years. The range for the spiritual score was from 82.00 to 220.00 with a mean of 163.2 (SD ± 15.8), a median value of 166.00, and grouped median at a healthy 165.78.

The sociocultural variables were subjected to component analysis/extraction by the standard technique PCA. The objective was to identify the important group variables who were significant contributors. The extracted components were suitably named, considering their factor loading for meaningful understanding.

The communalities extraction for study variables was maintained at the accepted value of ≥ 0.40 . The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (0.57) and the significance level for Bartlett's Test of Sphericity (0.00) were found favorable to run PCA. This was supported by good sample size (>200).

Descendance from the joint family system, freedom from family, and marital bondage was named 'emancipation' - the most important component (PCA 1). It contributed to a 15.5% variance. The family heritage, the second component that spoke about the religiosity of the family of origin, explained 13.7% of the variance. The third component termed as 'stimuli' included important sociocultural dimensions like the reason or motive behind the decision to adhere to the spiritual path and what activities they perform to achieve their goal. This contributed to 11.2% of the variance in the matrix. The 4th PC under the title 'Faith' included faith and beliefs in own religion and respect for others. This explained 9.3% of the variance. Higher-level religious education despite low formal ones formed the 5th PC under the header 'education' which explained 8.5% of the variance. 6th PC, the last but not the least one was named 'Self-hegemony', which has two factors: participants' designation in the clan and the most influential factor that promoted one to adopt sainthood. This PC had a variance contribution of 7.6%.

All the 6 PCs were cumulatively responsible for 66.2% of the variance, an acceptable figure in terms of PCA. Tables 1 and 2 depict these observations.

Eigenvalues are important and considerate in PCA. Any

Table 1: Rotated component matrix ^a with component names and their contributing sociocultural factors.

Sociocultural factors	Principal components (PCs)					
	1: Emancipation (Freedom from Bondage)	2: Family heritage (religiousness)	3: Stimuli (for saintly path)	4: faith	5: Education	6: Self- hegemony
Marital status	.896					
No. of children	.895					
Previous family type (before adopting saintly life)?	.648					
Religious activities performed in the family of origin		.959				
Is your original family religious?		.962				
Sources of Spiritual guidance						
The pretext for adopting sainthood?			.693			
The aim of adopting sainthood			.796			
Your daily routine			.561			
Do you believe in other religions?				.806		
Have you read any scriptures from other religions?				.815		
Spiritual education					.800	
Formal education					.747	
Designation in the clan/sub-clan						.583
The most influential factor in adopting sainthood						.769

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Table 2: Total variance explained by extracted components (PCA analysis) and validated by Monte Carlo PCA for Parallel analysis (supplementary table 1)

Component	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.329	15.527	15.527	2.329	15.527	15.527	2.128	14.186	14.186
2	2.064	13.763	29.290	2.064	13.763	29.290	1.901	12.674	26.861
3	1.693	11.289	40.579	1.693	11.289	40.579	1.742	11.616	38.477
4	1.410	9.398	49.977	1.410	9.398	49.977	1.521	10.141	48.617
5	1.287	8.581	58.558	1.287	8.581	58.558	1.390	9.268	57.886
6	1.147	7.649	66.207	1.147	7.649	66.207	1.248	8.321	66.207
7	.852	5.683	71.890						
8	.825	5.500	77.390						
9	.760	5.065	82.455						
10	.651	4.341	86.796						
11	.643	4.288	91.084						
12	.527	3.510	94.594						
13	.490	3.264	97.858						
14	.208	1.389	99.247						
15	.113	.753	100.000						

Extraction Method: Principal Component Analysis.

value over 1 is considered for component extraction. Their validity is cross-checked by Monte Carlo PCA for Parallel Analysis. If the plot eigenvalue is above and over

the Monte Carlo figure for that PC then that is retained. In this study, the 6 extracted components with eigenvalue over 1 were found maintainable by the Monte Carlo test.

The scree plot in Figure 1 and Monte Carlo test values in supplementary Table 1 provide the details in this regard.

The extracted components are plotted in 3D rotated space to explain the existing relationship (grouping) of the factors under each component which is displayed in Figure 2.

Part 2 _ quest 1: Do you believe in other religions? Part 2 quest 2: If yes, have you read any scriptures from other religions? Part2 _ quest 3: Is your family religious? Part2_ quest 4: If yes, then do religious activities performed in

your family? Part2_quest 7: What was the Pretext for adopting sainthood? Part2_quest 9: What was the aim behind adopting sainthood? Part2_quest 10: What is your daily routine? Pre_ family type: Previous (before denouncing) family type. Children: How many children do you have?

Linear Regression analysis for the select variables considered in PCA was carried out to find the predictive contribution of each of them to the overall spiritual score

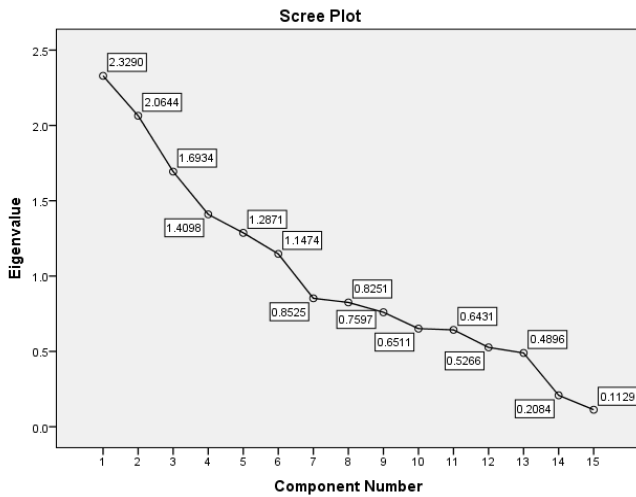


Figure 1: Eigen Values of extracted components explained by the scree plot

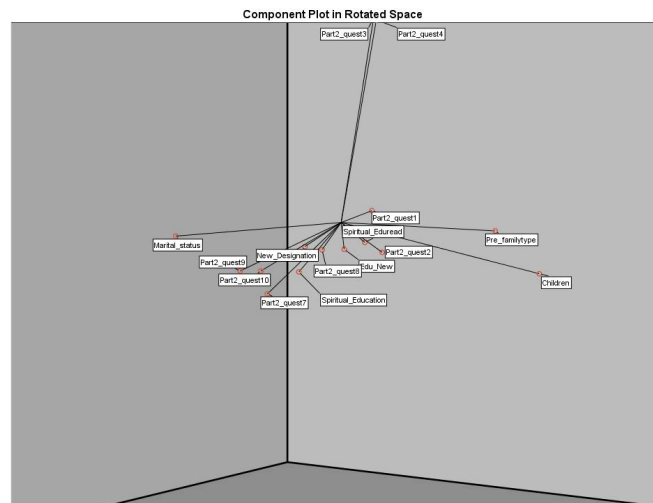


Figure 2: Components plotted in 3D rotated Space
NB: The explanations for the variables in the figure.

Table 3: Regression model summary (Coefficients^a)

Model	Unstandardized coefficients		Standardized coefficients		Sig.	95.0% Confidence interval for B	
	B	Std. error	Beta	t		Lower bound	Upper bound
(Constant)	162.481	4.854		33.472	.000	152.955	172.008
Marital status	.832	1.053	.041	.790	.430	-1.235	2.899
No of children	.404	.434	.048	.931	.352	-4.48	1.257
Type of family of origin	2.240	.487	.164	4.598	.000	1.284	3.196
Are religious activities conducted in your original family?	-3.645	2.717	-.091	-1.342	.180	-8.976	1.687
Do you come from a religious family?	-1.673	2.743	-.041	-.610	.542	-7.056	3.710
Spiritual education	-.304	.339	-.030	-.896	.370	-.968	.361
Reason for adopting spiritual life	.021	.065	.011	.331	.740	-.105	.148
The motive for adopting spiritual life	-.064	.066	-.035	-.974	.330	-.194	.065
Daily routine	-.208	.082	-.088	-2.532	.012	-.369	-.047
Do you recognize other religion	2.388	.904	.098	2.641	.008	.613	4.162
Have you read scriptures from other religions?	.265	.253	.037	1.046	.296	-.232	.762
Spiritually educated by whom?	-.675	.382	-.059	-1.766	.078	-1.426	.075
Level of Formal New	.021	.258	.003	.083	.934	-.485	.528
Designation in the clan/sub-clan	.664	.575	.037	1.156	.248	-.463	1.792
Motivator for adopting spiritual life	-.149	.058	-.083	-2.563	.011	-.262	-.035

a. Dependent Variable: Spiritual Score

of the participants. The regression model summary was found to fit with Sig. F Change of 0.00 and the corresponding ANOVA mean square of 555.22, F at 5.06, and significance level of 0.00.

It was observed that the participants' background of a joint family system (family of origin) was a significant predictor of spirituality (standardized β 0.16, p - 0.00). Similarly, other important sociocultural predictors were the dedicated daily routine of spiritual enhancing practice like yoga, meditation, and reading spiritual scriptures (standardized β 0.08, p -0.01), respect for own and other religions (standardized β 0.09, p - 0.00), and presence of strong self-motivation (standardized β 0.08, p -0.01). Table 3 presents the regression model summary.

Discussion

Perpetually, physical and psychological health care has witnessed significant advancement while the spiritual component - the oldest and most cultured- has been subject to chronic neglect.^{8,12} In recent times, concerns over health research equity are gathering momentum. The exponents favor empirical exploration of other dimensions of health, including 'spiritual health'.^{13,14}

Like the different determinants of health, spiritual health is also subjected to multiple impetuses. Among them, sociocultural factors are important ones. Though we have studies on the commoner and sick populace, the big fish (spiritual exponents) has seldom been caught. In them, the study of spirituality in general and its' different determinants, in particular, are sparse. In this regard, Indian Saints are no exception. Studies exploring their spiritual demure are far and few, so also its' different determinants, especially the sociocultural ones.⁸ This reported study is probably the first of its kind in exploring this knowledge gap.

20 sociocultural variables were explored under component extraction and linear regression modelling. We were able to extract 6 valid components (PCs), and they cumulatively contributed to 66.2% of the variance. The loaded components under them demonstrated high factor loading (>0.5). For ease of interpretation, components were suitably named.

The 1st PC was named 'Emancipation' – Which means freedom from Bondage/family attachment. It was justified by its social conjunctive: unmarried participants, participants with no or a smaller number of children, and saints hailing from a joint (traditional) family system. The family of origin appeared to be a strong predictor of spirituality. Researchers like Coyle J,

Nelson-Becker, H *et al.*, and Mishra *et al.* opined in favor of the personalized nature of spirituality where individual family background and freedom are the essences for 'transcendence of self'.^{8,15-17}

The 2nd PC was named 'Family heritage/cultural'. This included cultural components like the performance of religious activities and the religiousness' of the family of origin. Both the factors have very high component loading ($>.9$). The significance of cultural factors in spiritual grooming is long noted. Jenkins (1992), Sherkat and Ellison (1999), Mahoney *et al.* (2001), Lucchetti G, Lucchetti, AL, Kirmayer LJ, and Koenig HG strongly advocated the role of religiousness in spiritual development.¹⁸⁻²³

The 3rd PC was named Stimuli (for spiritual life and enhancement). This included variables like the pretext (social factors) under which one was prompted to adopt sainthood. The aim is about what one does as a routine to stay focused on the chosen path. The most influential predictor among them was the 'routine' one adopts to achieve the set goal. Mokuau N (2001), and Weathers E (2016) found that daily spiritual experiences are especially associated with the need to find meaning in life.^{24,25}

'Faith', the fourth PC, includes cultural variables like belief and respect for all religion. It was observed that most of the participants had respect for other religions, which was a significant contributor to spiritual growth. There was also a strong desire to study scriptures from other religions to enhance ones' awareness. The proverbial saying 'faith can move mountains' is apt in the case of spirituality. In spirituality, faith is defined as 'a congruence of belief, trust, and obedience to God or the divine'.²⁶ The healing power of faith is also substantiated through control trials in psychoneuroimmunology and contemporary psychology. The role of transcendental experience in health and healing is also well documented.²⁷ The cultural values associated with faith and belief also enhance one's religiosity and spirituality.^{28,29}

The 5th PC was named 'Education' and included the participants' spiritual' and 'formal' education. In recent times the significance of spiritual education besides the conventional formal one is increasingly emphasized for whole-person care.³⁰ As per Mounaghi HK, the spiritual faculty of preachers and teachers can enhance learning per se in their students.³¹ Even the domain of spiritual learning doesn't get affected by the level of formal education thus, increasing its access for commoners.⁸

Self-hegemony, the 6th and the last (but not the least) component, induced two variables. They are the participant's designation in the clan and the role of motivator in adopting spiritual life. Of this, self-motivation was a significant influencing variable of spirituality. Ellison CW, observed that the inner resources, strength; and ability to adapt to adversity ensure an individual's affirmation in his spiritual journey.³² Bredle JM, Salsman JM, Debb SM, *et al.* (2011) also had a similar view emphasizing personal beliefs and motivation are key elements to overcoming adversity and are the core elements of spiritual health and personal wellness.³³

Conclusion

The lack of equity in health research is glaring within our present health care system. It is the role and responsibility of the sensible researching commune to gather enough scientific information to advocate for equity in healthcare research. This study is one of them that highlights the different sociocultural drivers of spirituality in Indian spiritual preachers. Recognition of the significant variables and encouraging their involvement in a person's daily life will go a long way in shaping his life positively and purposefully.

Besides this in rural sectarian society, these saints can be used as agents of change for better spiritual growth, enhancing self-belief and higher coping in adverse physical, psychological, and social situations. There are past and present instances where religious places have shaped the health and well-being of the rural community. Dr. Viktor Frankl, line – 'No cure that fails to engage our spirit can make us well' should be an eye-opener for all concerned about human health and well-being.

New Findings

- Important sociocultural components of spirituality in India were explored for the very first time.
- Background of the joint family (traditional Indian family), faith and respect for all religions, a committed daily routine, and strong self-motivation were the shortlisted variables that significantly impacted spirituality.

Ethical Permission

The study had ethical approval from the IEC vid Ref. No. 52/2016

Acknowledgment

We express our heartfelt thanks to all the participants and the administrative management team of the fair for

their kind cooperation. A special mention to the institute and its management for their support.

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